



THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sorrells *et al.*

Appl. No.: 09/525,185

Filed: March 14, 2000

For: **Spread Spectrum Applications of
Universal Frequency Translation**

Confirmation No.: 8068

Art Unit: 2634

Examiner: Odom, Curtis B.

Atty. Docket: 1744.0450002

Sixth Supplemental Information Disclosure Statement

Mail Stop Issue Fee

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. The numbering on this Sixth Supplemental Information Disclosure Statement is a continuation of the numbering in Applicants' Fifth Supplemental Information Disclosure Statement filed on March 11, 2005 in connection with the above-captioned application.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Document AM23 was cited in an Office Action in related German Patent Application No. 19983659.0-35, filed October 20, 1999, entitled "Method and System for Frequency Up-Conversion," directed to related subject matter. Also cited in said Office Action was U.S. Patent No. 5,557,641, which as already been cited in the present application.

Document AQ59 was cited in a Notice of Allowance in related U.S. Patent Application No. 10/290,323, filed November 8, 2002, entitled "Method and Apparatus for DC Offset Removal in a Radio Frequency Communication Channel," directed to related subject matter.

Document AR59 is an English-language Abstract of document AM23.

Documents AB60-AI60 were cited in an Office Action in related U.S. Patent Application No. 09/855,851, filed May 16, 2001, entitled "Apparatus, System, and Method for Down-Converting and Up-Converting Electromagnetic Signals," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 5,465,415, 6,049,706, 6,061,551, 6,580,902, 6,687,493, and 6,813,485, all of which have already been cited in the present application.

Documents AA61 and AB61, and AE65 are co-owned patents which are directed to related subject matter.

Document AC61 was cited in an Office Action in related U.S. Patent Application No. 09/550,642, filed April 14, 2000, entitled "Method And System For Down-Converting An Electromagnetic Signal, And Transforms For Same," directed to related subject matter.

Also cited in said Office Action were U.S. Pat. Nos. 5,678,226 and 6,094,084, which have already been cited in the present application.

Document AD61 was cited in an Office Action in related U.S. Patent Application No. 09/476,092, filed January 3, 2000, entitled "Analog Zero IF FM Decoder And Embodiments Thereof, Such As The Family Radio Service," directed to related subject matter. Also cited in said Office Action were U.S. Pat. Nos. 5,600,680 and 5,606,731, which have already been cited in the present application.

Documents AE61-AH61 were cited in an Office Action in related U.S. Patent Application No. 09/567,977, filed May 10, 2000, entitled "Optical Down-Converter Using Universal Frequency Translation Technology," directed to related subject matter. Also cited in said Office Action was Stewart, R.W. and Pfann, E., "Oversampling and sigma-delta strategies for data conversion," *Electronics & Communication Engineering Journal*, IEEE, pp. 37-47 (February 1998), which has already been cited in the present application.

Documents AI61 and AA62 were cited in a Notice of Allowance in related U.S. Patent Application No. 09/632,855, filed August 4, 2000, entitled "Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments," directed to related subject matter.

Document AB62 was cited in an Office Action in related U.S. Patent Application No. 09/796,824, filed March 2, 2001, entitled "Phased Array Antenna Applications of Universal Frequency Translation," directed to related subject matter. Also cited in said Office Action was U.S. Patent No. 5,742,189, which has already been cited in the present application.

Documents AC62-AE62 were cited in an Office Action in related U.S. Patent Application No. 10/318,207, filed December 13, 2002, entitled "Method And Apparatus For Reducing Re-Radiation Using Techniques Of Universal Frequency Translation Technology," directed to related subject matter.

Documents AF62-AI62 were cited in a Notice of Allowance in related U.S. Patent Application No. 09/855,851, filed May 16, 2001, entitled "Apparatus, System, and Method for Down-Converting and Up-Converting Electromagnetic Signals," directed to related subject matter.

Documents AA63-AC63 were cited in an Office Action in related U.S. Patent Application No. 10/315,174, filed December 10, 2002, entitled "Reducing DC Offsets Using Spectral Spreading," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 5,999,561 and 6,686,879, which have already been cited in the present application.

Document AJ24 was previously cited in the Third Supplemental Information Disclosure Statement, filed August 30, 2004. However, the Examiner neglected to initial the citation on the Form PTO-1449. Therefore, the document is now being re-submitted. Also, documents AN60, AD63-AI63, AA64-AI64, and AA65-AE65 were previously cited in the Fourth Supplemental Information Disclosure Statement, filed October 27, 2004. An Examiner-initialed Form PTO-1449 for the references cited in the Fourth Supplemental Information Disclosure Statement was never returned by the Examiner. Therefore, these documents are also being re-submitted.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below:

- ☐ 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- ☒ 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No statement or fee is required.
- ☐ 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
 - ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to

the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

☐ c. Attached is our PTO-2038 Credit Card Payment Form in the amount of ____ in payment of the fee under 37 C.F.R. § 1.17(p).

☐ 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our PTO-2038 Credit Card Payment Form in the amount of \$_____ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:

☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- ☒ 6. A concise explanation of the relevance of the non-English language document AM23 appears below in accordance with 37 C.F.R. § 1.98(a)(3):
- Document AM23 (DE 69221098T2) appears to describe a radiofrequency frequency multiplier comprising an automatic level control circuit. An English-language abstract of document AM23 is enclosed as document AR59. It is also noted that document AM23 is a counterpart of European Patent Publication EP 0 548 542 A1, which has already been cited in the present application.
- Document AJ24 (DE 196 48 915 A1) appears to describe a process of frequency conversion. An English-language translation is attached to the back of document AJ24. It is also noted that the Examiner has already considered the English-

language translation, which was cited in the Third Supplemental Information Disclosure Statement, filed August 30, 2004.

- ☒ 7. Copies of documents AM23, AJ24, AQ59, AR59, and AN60 are enclosed. However, in accordance with 37 C.F.R. § 1.98(a)(2), copies of the U.S. patents and patent application publications cited on the attached Form PTO-1449 are not enclosed.
- ☐ 8. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. _____, filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).
- ☐ 9. It is expected that the examiner will review the prosecution and cited art in parent application no. _____, filed _____, in accordance with MPEP 2001.06(b), and indicate in the next communication from the office that the art cited in the earlier prosecution history has been reviewed in connection with the present application.

It is respectfully requested that the Examiner initial and return a copy of the enclosed Form PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey T. Helvey
Attorney for Applicants
Registration No. 44,757

Date: 9/29/05

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SIXTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT	ATTY. DOCKET NO. 1744.0450002	APPLICATION NO. 09/525,185
	INVENTORS Sorrells <i>et al.</i>	
	FILING DATE March 14, 2000	ART UNIT 2634

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOC. REF.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA						
	AB60	4,789,837	12/1988	Ridgers			
	AC60	5,634,207	05/1997	Yamaji <i>et al.</i>			
	AD60	5,642,071	06/1997	Sevenhans <i>et al.</i>			
	AE60	6,211,718 B1	04/2001	Souetinov			
	AF60	6,212,369 B1	04/2001	Avasarala			
	AG60	6,308,058 B1	10/2001	Souetinov <i>et al.</i>			
	AH60	6,633,194 B2	10/2003	Arnborg <i>et al.</i>			
	AI60	2001/0036818 A1	11/2001	Dobrovolny			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOC. REF.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM23	DE 692 21 098 T2	01/1998	DE			No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

EXAMINER INITIAL	DOC. REF.	CITATION
	AN	
	AO	
	AP	
	AQ59	Hellwarth, G.A. and Jones, G.D, "Automatic Conditioning of Speech Signals," <i>IEEE Transactions on Audio and Electroacoustics</i> , Vol. AU-16, No. 2, pp. 169-179 (June 1968).
	AR59	English Abstract for German Patent No. DE 692 21 098 T2, 1 page, data supplied from the espacenet.

EXAMINER	DATE CONSIDERED
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 SIXTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT				ATTY. DOCKET NO. 1744.0450002		APPLICATION NO. 09/525,185	
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U.S. PATENT DOCUMENTS							
EXAMINER INITIAL	DOC. REF.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA61	6,873,836 B1	03/2005	Sorrells <i>et al.</i>			
	AB61	6,879,817 B1	04/2005	Sorrells <i>et al.</i>			
	AC61	6,057,714	05/2000	Andrys <i>et al.</i>			
	AD61	2003/0081781 A1	05/2003	Jensen <i>et al.</i>			
	AE61	5,994,689	11/1999	Charrier			
	AF61	6,512,544 B1	01/2003	Merrill <i>et al.</i>			
	AG61	6,628,328 B1	09/2003	Yokouchi <i>et al.</i>			
	AH61	6,801,253 B1	10/2004	Yonemoto <i>et al.</i>			
	AI61	3,737,778	06/1973	Van Gerwen <i>et al.</i>			
FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL	DOC. REF.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ24	DE 196 48 915 A1	06/1998	DE			Yes
	AK						Yes No
	AL						Yes No
	AM						Yes No
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)							
EXAMINER INITIAL	DOC. REF.	CITATION					
	AN60	Deboo, Gordon J., <i>Integrated Circuits and Semiconductor Devices</i> , 2 nd Edition, McGraw-Hill, Inc., pp. 41-45 (1977).					
	AO						
	AP						
	AQ						
	AR						
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U.S. PATENT DOCUMENTS							
EXAMINER INITIAL	DOC. REF.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA62	4,286,283	08/1981	Clemens			
	AB62	4,241,451	12/1980	Maixner <i>et al.</i>			
	AC62	5,014,130	05/1991	Heister <i>et al.</i>			
	AD62	5,390,215	02/1995	Anita <i>et al.</i>			
	AE62	5,805,460	09/1998	Greene <i>et al.</i>			
	AF62	6,882,194 B2	04/2005	Belot <i>et al.</i>			
	AG62	6,892,062 B2	05/2005	Lee <i>et al.</i>			
	AH62	6,917,796 B2	07/2005	Setty <i>et al.</i>			
	AI62	6,920,311 B2	07/2005	Rofougaran <i>et al.</i>			
FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL	DOC. REF.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)							
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EXAMINER INITIAL	DOC. REF.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA63	5,062,122	10/1991	Pham <i>et al.</i>			
	AB63	6,182,011 B1	01/2001	Ward			
	AC63	6,639,939 B1	10/2003	Naden <i>et al.</i>			
	AD63	4,441,080	04/1984	Saari			
	AE63	4,873,492	10/1989	Myer			
	AF63	5,697,074	12/1997	Makikallio <i>et al.</i>			
	AG63	5,784,689	07/1998	Kobayashi			
	AH63	6,335,656 B1	01/2002	Goldfarb <i>et al.</i>			
	AI63	6,690,232 B2	02/2004	Ueno <i>et al.</i>			
FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL	DOC. REF.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)							
EXAMINER INITIAL	DOC. REF.	CITATION					
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EXAMINER INITIAL	DOC. REF.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA64	5,636,140	06/1997	Lee <i>et al.</i>			
	AB64	6,366,622 B1	04/2002	Brown <i>et al.</i>			
	AC64	6,600,795 B1	07/2003	Ohta <i>et al.</i>			
	AD64	4,250,458	02/1981	Richmond <i>et al.</i>			
	AE64	5,760,629	06/1998	Urabe <i>et al.</i>			
	AF64	6,084,465	07/2000	Dasgupta			
	AG64	6,204,789 B1	03/2001	Nagata			
	AH64	6,064,054	05/2000	Waczynski <i>et al.</i>			
	AI64	5,218,562	06/1993	Basehore <i>et al.</i>			
FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL	DOC. REF.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)							
EXAMINER INITIAL	DOC. REF.	CITATION					
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	AQ						
	AR						
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U.S. PATENT DOCUMENTS

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	AA65	5,239,496	08/1993	Vancraeynest			
	AB65	5,896,304	04/1999	Tiemann <i>et al.</i>			
	AC65	6,005,903	12/1999	Mendelovicz			
	AD65	5,834,979	11/1998	Yatsuka			
	AE65	6,798,351 B1	09/2004	Sorrells <i>et al.</i>			
	AF						
	AG						
	AH						
	AI						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOC. REF.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

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	AQ	
	AR	

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